DOCUMENT RESUME

ED 431 074 CE 078 678

AUTHOR	Nigsch, Josef; Gunz, Dieter; Jenny, Christoph; Jehle, Karl
TITLE	Vocational Education in the Principality of Liechtenstein.
INSTITUTION	Liechtenstein National Authority for Vocational Education, Schaan.
PUB DATE	1997-00-00
NOTE	49p.; Supported by the European Union Leonardo da Vinci Action Programme. Information inside front and back covers will not be reproducible because it is printed in colored ink on colored background.
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Adult Education; Apprenticeships; Career Counseling; Career Guidance; Continuing Education; *Delivery Systems; Economic Climate; *Education Work Relationship; Educational Administration; Educational Cooperation; Educational Finance; Educational History; Educational Legislation; *Educational Policy; *Educational Trends; Elementary Secondary Education; Employment Qualifications; Financial Support; Foreign Countries; Futures (of Society); Government School Relationship; International Cooperation; International Educational Exchange; Job Training; Labor Market; Lifelong Learning; Postsecondary Education; *Program Administration; School Business Relationship; Special Needs Students; Technical Institutes; *Vocational Education; Womens Education
IDENTIFIERS	European Union; *Liechtenstein

ABSTRACT

This booklet provides an overview of vocational education (VE) in the principality of Liechtenstein. The following are among the topics discussed: Liechtenstein's government, sovereignty, history, and foreign policy; Liechtenstein's VE system (history, underlying principles, policy, structure, economic framework, legal basis, organization and governing bodies); acquisition of vocational qualifications (career guidance, dual/trial system of initial vocational training, apprenticeships, special types of VE, postsecondary vocational schools and technical colleges, professional qualification in the tertiary sector, education at universities and other academic institutions); continuing education opportunities in Liechtenstein and abroad; costs and financing (investments in VE, state expenditures on VE, VE's contributions to the economy); VE from various perspectives (views from the business sector, views from various sectors of industry); access to the European scene (VE and the European Union, areas of cooperation between the European Union and Liechtenstein); and challenges for the future (decreasing numbers of apprenticeships since 1986, females choosing traditional roles, overqualification, integration of less-gifted individuals, initial vocational teaching and block teaching, learning in practice, modular educational programs, international cooperation). Concluding the booklet are a bibliography and reference list containing a total of 22 references and addresses of 14 organizations concerned with VE in Liechtenstein. (MN)

National Authority of
Vocational Education

LEONARDO DA VINCI Office
Liechtenstein

ED 431 074

Vocational Education in the Principality of Liechtenstein

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Preface

Education in general and vocational education in particular have become an indispensable part of society's intangible investments, as has already been argued so aptly in the European Commission's *White Book on Growth, Competitiveness and Employment*. These days, more than ever before, businesses and employees alike find themselves faced with the challenge to actively cope with technological and economic changes that are developing faster and faster. This is only possible if they can rely on a system of high-quality vocational education.

In the Principality of Liechtenstein these demands are met to a very high degree. Although the possibilities of inital and continued education available can cover the need for vocational education to a limited extent only, they are, nevertheless, a valuable addition to the broad and diverse ranges of educational offers in our neighbouring countries, which are also open to interested Liechtenstein citizens. One dominant aspect of the Liechtenstein vocational education system is the apprenticeship: it guarantees an adequate, practical vocational education based on a close relationship and permanent exchange between the two principal *Lernorte* (learning centres), namely, the vocational school and the business.

In order to keep vocational education attractive even in the future, we must meet the new demands and encourage innovations in this field. The EU LEONARDO DA VINCI Action Programme on Vocational Education, in which Liechtenstein has been participating since 1995, offers excellent opportunities to do this. This initiative presents manifold possibilities to integrate the Liechtenstein vocational education system into the European educational scene. This will also help decisively to support the development of vocational education in Liechtenstein.

This brochure on *Vocational Education in the Principality of Liechtenstein*, which has been elaborated by the *Amt für Berufsbildung* (National Authority of Vocational Education) in collaboration with the LEONARDO DA VINCI Office in Liechtenstein, is the first source to provide comprehensive information on this topic.

Many Liechtenstein institutions of vocational education have collaborated in the compilation of this brochure and thus expressed their support and commitment to high-quality vocational education. I would like to thank to all participants for their valuable contributions.

I also thank the European Commission, which has provided financial support and thus contributed considerably to the realisation of this brochure.

Thomas Büchel
Deputy Chief of Government
Minister of Education

Neighbour

The Principality of Liechtenstein

Form of Government, Sovereignty, and History. The Principality of Liechtenstein is a constitutional hereditary monarchy with a democratic and parliamentary basis; the exercising of state power lies with the Prince as well as the people, who elect the parliament, the Landtag, every four years.

The House of Liechtenstein, which has owned possessions in Lower Austria and in Moravia since the late Middle Ages, acquired the domain of Schellenberg in 1699 and the lordship of Vaduz in 1712. In 1719 Emperor Karl VI raised the region to the status of *Reichsfürstentum*, a self-governing territory that was only responsible to the Emperor himself. As a member of the Confederation of the Rhine, Liechtenstein was first acknowledged to have extensive sovereignty in 1806. Skilful political behaviour and action, as well as fortunate historical circumstances, have permitted Liechtenstein to maintain its sovereignty since the dissolution of the German Confederation in 1866 until today.

Liechtenstein is situated in the Lake Constance region and is bordered by Switzerland in the south and west and by Austria in the north and east. After the Second World War the Principality, a sovereignty since 1806, developed at breathtaking speed from being a poor agricultural country into a centre of industry and finance.

Foreign Policy. To be recognised by the international community of states has always been and still is an essential prerequisite for a small country like Liechtenstein to prove its national sovereignty. Its accession to the European Free Trade Association (EFTA) in 1991 and the European Economic Area (EEA) in 1995 may be considered milestones for an intensified collaboration on a European level. On 9th April 1995 a majority of 55.9 % of the population voted in favour of the EEA Treaty, which provides for several specific exceptions and transitional arrangements for Liechtenstein.

A common history, cognate dialects, the Rhine Valley as a common inhabited region by both peoples, many decades of economic and currency union – they show how important the close relationship with Switzerland is for the way Liechtenstein sees itself.

The negative result of the Swiss referendum on the EEA put the Principality of Liechtenstein in a difficult situation, because it meant that the two countries would have to go different ways in their European policies. As far as their economic relations are concerned, the idea of *parallele Verkehrsfähigkeit* (parallel membership) brought a solution: since its accession to the EEA, Liechtenstein has been able to be a member of two economic areas, the European and the Swiss one.

Liechtenstein's political and economic relationships with its neighbouring countries

Germany
Lake Constance
Switzerland
Post Convention since 1921
Customs and Currency Union Treaty since 1924
Austria
Customs Treaty until 1919
Since the accession to the EU in 1995 Austria has been a bridge as well as a border to the EU
Principality of Liechtenstein
Area: approximately 160 sq km
Population: about 32,000
OSCE Final Act signed in 1975
Full membership in the Council of Europe since 1978 and in the United Nations since 1991
Accession to EFTA in 1991
GATT membership since 1994
Accession to EEA in 1995

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system

Historical Development

A small country is always limited in its capacity to establish a system of diverse educational options. In Liechtenstein this means that the field of general education is indeed covered very well by national educational institutions; vocational school education, however, is provided almost completely in Switzerland. One essential challenge for the national education policy, therefore, consists in an intensive collaboration with Switzerland in order to create the framework conditions which render all option of a well-developed education system accessible to Liechtenstein citizens.

A regular, statutory school system has existed in Liechtenstein since the early 19th century. A Decree issued by the Princely Court Chancellery in Vienna in 1805 required every community to establish a school and a school fund and at the same time stipulated compulsory school attendance for all children. The first proper school law dates from 1827 and was continually adjusted and amended in order to live up to social and pedagogical developments.

After comprehensive preparation work, in 1971 the *Schulgesetz* (Schools Act), which is still in force today, was put into operation. Since the middle of the 1980s endeavours for reforms have been underway, which have formed the basis for the guidelines on education policy developed in the 1990s.

The development of a state-organised vocational training took place only after that of the general school system. The real rise in vocational training occured after the Second World War, as a result of the accelerated economic growth.

Principles of Education Policy

- National education aims to offer a system of general and vocational education which supports pupils, students, trainees, and apprentices in their personal, social, intellectual, and vocational development.
- Access to basic general and vocational education is unrestricted and free of charge.
- School education has the task to enable young people to gain access to a vocational education which corresponds with their abilities and interests.
- Studies of foreign languages are particularly promoted in order to prepare the students for the greater demands resulting from the increasing international interconnections in very different areas of life.
- By encouraging life-long learning on all educational levels, pupils and students should be motivated to develop themselves and continue their education in the future, too.
- General and vocational education should achieve a standard which will permit this small country to hold own ground in international competition even in the future.
- Through close collaboration with Liechtenstein's neighbouring countries, Switzerland and Austria, a range of high-quality options in all fields of education is being strived for.

The Structure of the Educational System

Primary and Secondary Education. Liechtenstein maintains its own, well developed system of compulsory schooling. After having fulfilled compulsory schooling requirements, pupils may attend the *Oberstufengymnasium* (a grammar school offering only the upper cycle of secondary education), initial vocational training, or a voluntary tenth school year. The latter offers interesting opportunities for an enhanced preparation for the choice of profession and further promotes the development of the pupils' learning, working, and social behaviour.

Tertiary Education. Since the institutions of tertiary education established in the Principality of Liechtenstein itself can only offer a very limited amount of study courses, the majority of Liechtenstein students has to study abroad. By virtue of the 1976 mutual agreements with Switzerland and Austria on the equivalence of school-leaving and university-entrance certificates, the Liechtenstein *Matura* (the final examination taken at grammar school), entitles the student to study at universities in both neighbouring countries. In Germany access to individual study courses is granted by the federal or *Länder* authorities, which decide on the individual case.

Adult Education. The state has assigned adult education to non-profit-making institutions and provides considerable financial means to support a large number of educational initiatives for adults.

(see survey on pages 22–23)

Vocation

Economic Framework Conditions

At present almost two thirds of the total number of 22,000 jobs are occupied by foreign staff, the majority of whom are international commuters from Switzerland and Austria. A large part of the foreign employees working for Liechtenstein companies have already been well trained for their jobs in their native countries. Renowned experts and specialists often work as executives in the Liechtenstein industry. The exploitation of other European systems of vocational education by employing foreign members of staff has been one of the most important factors for Liechtenstein's economic prosperity.

Liechtenstein can only provide a limited amount of resources for the implementation of an independent vocational education system. However, the system is fully functional because of: practical oriented, basic training in the companies; free access to all school vocational education institutions in Liechtenstein and its neighbouring countries; and the beneficial exploitation of additional qualifications by employing foreign specialists.

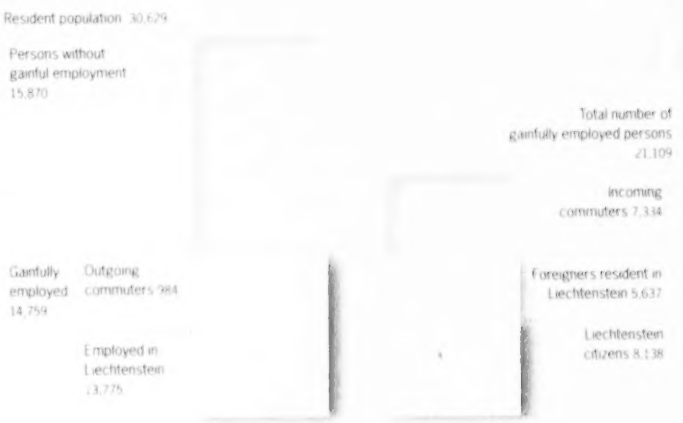
The capital, research and development intensive products manufactured by Liechtenstein's industrial companies, which are exclusively export-orientated, are successful all over the world. In order to be able to maintain the high standard of products and services, the very well-qualified staff is required. The same is true for the many small and medium-sized enterprises.

The trend towards an expansion of the services, which can be observed in many industrialised western countries, is noticeable in Liechtenstein as well. The available range of offers is dominated first of all by highly-specialised financial services rendered by banks, trusts, insurance companies, and lawyers' offices to an international clientele. This sector, too, depends on highly qualified staff in order to be able to cope with all the demands of an attractive international financial centre.

Despite high production costs Liechtenstein businesses are able to hold their own ground in the world markets due to the existing locational advantages. High-quality specialised products and services will also guarantee their competitiveness in the future. Again this requires employees who are highly qualified.

The consistent exploitation of the available resources offered by the Liechtenstein educational institutions and businesses and a very close cooperation with Switzerland in the field of vocational education are factors of decisive importance which make sure that the Liechtenstein economy will be able to recruit qualified labour. However, in the end the total requirement of labour can be covered only by employing human resources from abroad.

Total number of employees on 31 December 1994


Resident population 30.629
Persons without gainful employment 15.870
Gainfully employed 14.759
Outgoing commuters 984
Employed in Liechtenstein 13.775
Total number of gainfully employed persons 21.109
Incoming commuters 7.334
Foreigners resident in Liechtenstein 5.637
Liechtenstein citizens 8.138

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The Roots of the Modern System of Vocational Education

School education and vocational education in Liechtenstein have developed almost independently of each other. The general school system has grown on the basis of tradition and parallel to those of the neighbouring countries. Standard provisions on vocational education, on the other hand, were established only at the beginning of this century, due to the predominantly rural structures, the minor role played by trade and crafts as well as the late industrialisation in the 19th century.

Gainfully employed persons according to economic sectors in per cent

In 1929 the *Schulgesetz* (Schools Act) introduced the legal basis for public vocational courses for apprentices. The first ideas about the establishment of an independent vocational school in Liechtenstein date from the same time. But these ideas soon gave way to the insight that a small country like Liechtenstein would have to collaborate with its neighbour Switzerland, if it was to offer an optimum and comprehensive range of vocational education measures for many different professions.

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The Legal Basis

By virtue of the *Lehrlingsgesetz* (Apprenticeship Act) of 1936 all apprentices were required to attend a school in addition to practical training in a company. This dual system became the basis for vocational education.

Promoted by the economic upswing after the war, when the country developed from an agricultural into an industrial and service state, vocational education became more and more important. The *Berufsbildungsgesetz* (Vocational Education Act) of 1976 has given the Liechtenstein system of vocational education a legal structure and organisation which is up to the new demands.

The relationship with Switzerland, which has always been based on partnership and has been developed over many years, is still considered one of the key factors for the functioning of the Liechtenstein vocational education system. Career profiles as well as the education and examination regulations applicable in Switzerland are of importance for Liechtenstein, too, and in this context Liechtenstein is granted an opportunity to be consulted by the competent Swiss authorities.

By virtue of its accession to the EEA in 1995 and the resulting possibilities of international collaboration in the field of vocational education, Liechtenstein also hopes to gain access to a broader spectrum of education in Europe.

The *Berufsbildungsgesetz* of 1976 defines the legal framework for the Liechtenstein vocational education system. It stipulates, *inter alia*, provisions on

- the organisation of vocational education,
- initial vocational training,
- continued education and retraining,
- financial matters.

An important aspect of the *Berufsbildungsgesetz* is the creation of the prerequisites to be met in order to guarantee that Liechtenstein pupils, students, and trainees may benefit from school and training vacancies in foreign vocational schools and institutions of vocational education. In this context Liechtenstein contributes to the establishment and operation of institutions of vocational education in Switzerland. For example, Liechtenstein has been granting financial aid to the construction and the operation and maintenance of the *Berufsschulzentrum* (Vocational Education Centre) or BZB in Buchs, a neighbouring Swiss community.

In the light of the changing economic and social framework conditions, the innovations taking place in vocational education, and the situation and circumstances resulting from the accession to the EEA in 1995, the Liechtenstein parliament will work on a draft amendment to the *Berufsbildungsgesetz* in its 1997 session.

Organisation and Governing Bodies

In accordance with the *Berufsbildungsgesetz*, the following bodies are assigned specific tasks in the field of vocational education:

Government. The government, and the Department of Education in particular, supervise the whole educational system, including vocational education. The government decides on the employment of financial means and the recognition of educational institutions and courses.

The Berufsbildungsrat (Council of Vocational Education). This is an advisory committee instituted by the government and the *Amt für Berufsbildung* in respect of all questions of principle related to the vocational education system. Its seven members are appointed by the government for four years.

The *Berufsbildungsrat* deals, *inter alia*, with applications for the recognition of vocational schools and courses, with the organisation of educational strategies to be implemented in the country, with the enactment of education regulations, and with the implementation of experiments in vocational education.

The Amt für Berufsbildung (National Authority of Vocational Education). It is in charge of the execution of the *Berufsbildungsgesetz* and the administration and organisation of the whole vocational education system. Its most important tasks include the following:

- to lend support to the government and the *Berufsbildungsrat*,
- to supervise vocational schools as well as businesses and workshops where apprentices are trained,
- to provide vacancies for apprentices,
- to advise apprentices, parents, instructors, and masters,
- to supervise the compliance with all legal and contractual provisions in apprenticeships and training conditions,
- to organise continued education for masters and instructors,
- to execute the examination system and the issuance of certificates of ability and other certificates,
- to administer the budget in view of the national vocational education system,
- to organise the participation in national and international vocational competitions,
- to collaborate in national and international committees.

Within the framework of co-operation with Liechtenstein's neighbouring countries in the field of basic school education, the *Amt für Berufsbildung* collaborates closely with approximately 30 specialised schools and education centres in Switzerland. Collaboration with schools for master craftsmen, advanced specialised schools, technical colleges and *Fachhochschulen* also constitutes an increasingly important task in order to be able to contribute and be involved on this level.

too. Accordingly, discussions and meetings in the spirit of partnership on an official level are of decisive importance, too.

The Berufsberatungsstelle (Career Guidance Office). Since the very beginnings of legal regulations on vocational education, the Berufsberatungsstelle has been offering pupils, young people in general, students, and adults information, animation, and individual counselling in all questions of initial and continued vocational education.

In order to promote the collaboration with career guidance institutions in other member states, the Liechtenstein Berufsberatungsstelle has been participating in a LEONARDO DA VINCI project on *Vocational Orientation, Information, and Counselling.*

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Qualification

Career Guidance

As in other European countries, many young Liechtensteiners decide to attend the *Gymnasium* in order to subsequently go on to higher education institutions. A vast majority of young people, however, still chooses initial vocational training in the form of a *Lehre*, while only a minority attend *Fachschulen* or opt for *Anlehre*.

Counselling. The work of the *Berufsberatungsstelle* focuses on giving individual advice to young people and adults. By way of intensive discussions in which the person seeking advice is actively involved and the purposeful employment of psychological tests and other methods, career guidance officers offer their clients the best support available to find solutions for the manifold career problems and questions.

Information. One of the most important tasks assigned to the *Berufsberatungsstelle* is the distribution of information on the challenges and features presented by the various professions and the possibilities of initial and continued vocational education offered by schools and the dual education system. These informational activities are promoted by the *Berufsinformationszentrum* (Vocational Information Centre) or BIZ on the one hand, and by means of so-called Documentation Corners in Liechtenstein schools on the other. Careers information events and other public relations work help to provide comprehensive information for all target groups.

The Dual/Trial System of Initial Vocational Training

Animation and Collaboration. Groups and school parties are encouraged to actively reflect on vocational choices. Moreover, all persons involved in the process of choosing a profession should be motivated to co-operate: either within the framework of meetings held with students and parents, in class discussions, or in consultations with teachers and masters, etc. Further possibilities are offered by the *Berufsinformationszentrum*, which may also be visited to find information independently. Important partners in this interaction are the Career Guidance Centres, schools, parents, businesses and their representatives. However, the actual focus of attention are the pupils and young people directly concerned with choosing a profession.

Career Guidance – Assistance and Motivation to Help Oneself. The idea of career guidance consists in providing advice to interested parties so that they will learn to realise their own interests, to weigh up various possibilities, to make or correct decisions and to implement them. It will thus be possible to overcome personal development crises at school and in the person's working life.

Similar to the situation in the neighbouring countries, in Liechtenstein, too, the education and training of skilled-trade apprentices on a dual basis is indeed the backbone of the national vocational education system and contributes decisively to guaranteeing the competitiveness of the resident businesses. The system is based on an interaction between practical training on the job and school lessons, which are of a more theoretical nature.

In addition to businesses and vocational schools, the competent vocational associations offer specific introductory courses in their respective fields. This *trial education system* has become a new catchword.

At present there are approximately 900 apprentices training for around 100 different professions. Altogether there are 800 companies training apprentices in Liechtenstein, for professions in industry, trade and commerce, agriculture and forestry, home economics and services. In comparison with the overall number of apprenticeships, commercial professions prove the most attractive to young people.

The Elements of the Apprenticeship. An apprenticeship is subject to the provisions of a contract of apprenticeship, which defines the business providing the training, the direction of the education and training attended, the duration

of the educational training, as well as working hours, pay, vocational school attendance, and insurance conditions.

Depending on the vocational field concerned, initial vocational training lasts for up to four years. In addition to the specialist training on the job, apprentices and trainees attend vocational school for one or two days per week. The Apprentices' wages in the various branches of trade differs; on average it amounts to Sfr. 500 during the first year and is increased to approximately Sfr. 1,100 in the fourth year of training.

At the end of their apprenticeships, apprentices have to pass a final examination in order to acquire a Fähigkeitszeugnis (certificate of ability). They can then go on to continued education in order to enter new careers: from taking advanced examinations in order to acquire a Meisterbrief (master craftsman diploma) up to graduate courses at Fachhochschulen or technical colleges.

Range of popularity of individual professions or categories of professions as resulting from the number of apprenticeships completed in winter 1995/96 and summer 1996

Special Types of Initial Vocational Training

Vocational Education of Disabled Persons. The vocational education of disabled persons is subject to special provisions of the *Berufsbildungsgesetz*; in particular special final examinations may be organised. Businesses which train a disabled person may be eligible to certain subsidies. A Liechtenstein foundation operates a central *Beschützende Werkstätte* (Sheltered Workshop), which integrates disabled persons into the work process and offers pedagogical care.

Anlehre (Initial Vocational Training at Lower Level). Young people who are not able to meet the requirements of a standard apprenticeship may be introduced into a vocational occupation by means of *Anlehre*, which usually lasts for two years. It provides an individual training in certain parts of a given profession. The respective contract stipulates a training programme that takes the capacities of the young person concerned as well as of the respective business into consideration. Those apprentices attend special classes of a vocational school and are taught in vocational as well as general subjects. The practical final examination is taken in the business providing the training, while there is no examination in the subjects taught at school. Upon completion of the *Anlehre* the apprentice is issued a respective certificate (*Anlehrausweis*). This special vocational training is possible for all kinds of jobs; at present approximately 1 to 2 % of all apprenticeships fall within this category.

Vorlehre (Pre-Apprenticeship). This is an offer to young people whose native language is not German and whose command of the German language does not yet permit them to attend standard lessons at vocational schools. *Vorlehre*, which lasts up to one year, gives these young people an opportunity to intensively deal with their future occupations while at the same time improving their command of German on three half-days per week. *Vorlehre* is a contractual relationship, and the trainees are also paid an apprentice's wage.

Berufsmittelschule (Vocational School at Higher Level). *Berufsmittelschule* offers talented and ambitious apprentices a broader general education which intensifies their vocational and personal development and permits them to continue their studies at *Fachhochschulen* or technical colleges or attend other advanced vocational courses without having to take additional entrance examinations. This type of school is completed by taking the *Berufsmaturitätsprüfung*, an examination proving that the students have achieved the standards required.

Fachschulen (Specialised Schools). Only a relatively small number of young people attend *Fachschulen*. Of these it is commercial schools that prove the most attractive. But there are also specialised schools for nurses and doctor's receptionists, for domestic sciences, agriculture and forestry, for artistic professions, for infant care, and many more.

Fachhochschulreife and Berufsmaturität

(Entrance qualification for *Fachhochschulen* and Technical Colleges)

More than ever, continued vocational education is an important basis for an individual professional career. It is now possible to go various ways to achieve the academic standards required to study at *Fachhochschulen*, so that all those who have entered the working world by completing an apprenticeship are now offered an opportunity to obtain higher professional qualifications.

Various ways to acquire the standards required in order to attend *Fachhochschulen* and Technical Colleges

Berufsmaturität

Vollzeit Vorkurs Berufsmaturität
(Full-time Preparatory Course for attending *Fachhochschulen* and Technical Colleges)
Full-time course
duration: 1 year

Berufsmittelschule
(Vocational School at higher level)
During apprenticeship
duration: 3 years

Vorbereitungslehrgang Fachhochschulreife
(Preparatory Course for attending *Fachhochschulen* and Technical Colleges)
After apprenticeship, while in full employment
duration: 3 semesters

Access to *Fachhochschule Liechtenstein* without any further examination.

Access to Technical Colleges in Switzerland and *Fachhochschulen* in Austria.

Limited access to *Fachhochschulen* in Germany.

Berufsmittelschule (Vocational School at higher level). One possibility for apprentices to achieve the standard required in order to study at a *Fachhochschule* is the three-year *Berufsmittelschule*

Professional Qualification in the Tertiary Sector

during apprenticeship. There are technical, trade, commercial, and design courses.

Vollzeit-Vorkurs (Full-time Preparatory Course for attending *Fachhochschulen* and Technical Colleges). Applicants who have already completed an apprenticeship may attend a one-year full-time course preparing them for Berufsmaturität.

Vorbereitungslehrgang Fachhochschulreife (Preparatory Course for attending *Fachhochschulen* and Technical Colleges). This three-semester part-time course has been offered in Liechtenstein since 1992. Persons who have completed an apprenticeship may thus qualify for studies at the Fachhochschule Liechtenstein as well as numerous Fachhochschulen in Austria. Furthermore, they are also entitled to enrol for technical colleges in Switzerland, and they may begin their studies at German Fachhochschulen if they pass an additional aptitude test.

The *Vorbereitungslehrgang* is an important achievement of the Liechtenstein education system. For the first time people who have taken up an occupation early on in their lives now have the possibility – without giving up their jobs or having to attend grammar school – to achieve a qualification which permits them to register at the Fachhochschule Liechtenstein. This is another link in a chain of educational offers which, at least for some professions, leads from basic vocational education up to a college graduation in Liechtenstein.

Vocational education in the tertiary sector is offered first of all by Fachhochschule Liechtenstein which offers study courses in engineering, economics and design and is attended part-time in the relevant field while still in employment.

Fachhochschule Liechtenstein. Since the Liechtensteinische Ingenieurschule has been converted into a Fachhochschule, all study courses have been structured in accordance with the relevant directives of the European Union. Liechtenstein's accession to the EEA has promoted the integration of the Fachhochschule into the European education scene. The most important effect connected with this is the fact that its diplomas are recognised everywhere in Europe. The Fachhochschule's successful participation in the European education programmes (COMETT, LEONARDO DA VINCI, SOKRATES) has enhanced its integration in the international education scene.

The Fachhochschule Liechtenstein influences the whole Lake Constance region beyond Liechtenstein's national borders. Its students and graduates are much sought after and highly qualified specialists. The high level of the continued education offered, which is attended part-time while still in employment, is achieved by a consistent interaction of the Fachhochschule and the economy. Thus, every single day the two *Lernorte* (learning centres) constituted by the Fachhochschule on the one hand and the company on the other hand are directly linked

with one another. Prior to commencing their studies, students have to prove that they have already worked in the respective field to be studied. The idea that theory and research should be orientated towards practical requirements and possibilities of application is thus implemented as far as at all possible. In particular, these prerequisites support the fundamental concept of *life-long learning*.

Applied research and development are closely related to practice. Every year, therefore, acting in collaboration with businesses the *Fachhochschule Liechtenstein* implements numerous projects designed by students or in which students are involved.

The modular structure characterising the curriculum of the *Fachhochschule Liechtenstein* permits a fast compliance with the qualification requirements of the economy. Graduate courses in

- architecture,
- civil engineering,
- mechanical engineering, and
- economic informatics,

which are characterised by their high degrees of application-orientation, promote the students' competence in respect of methodologies, specialist expertise and social knowledge and offer them freedom in their individual ways of studying. The results achieved are proven by credits defined in accordance with the European Credit Transfer System (ECTS) of the European Union. Graduates are awarded the title of *Diplom-Ingenieur FH* (graduate engineer) or *Diplom-Architekt FH* (graduate architect), which are recognised all over Europe.

NTB – Interstaatliche Ingenieurschule Neu-Technikum Buchs. Together with the Swiss Cantons of St Gall and the Grisons, the Principality of Liechtenstein sponsors and operates *Neu-Technikum Buchs*, which offers an application-orientated, interdisciplinary engineering course focusing on system technology. In the last year of the three-year full-time study course, students may choose one of the following specialist subjects to be further consolidated: physical engineering, measurement technology and control engineering, engineering computer sciences, medical engineering, electronics, micro-system technology, product development, and materials engineering.

The structure and organisation of the graduate study courses correspond with the guidelines stipulated by the Swiss *Fachhochschulgesetz*. NTB has already been recognised as a *Fachhochschule* by Liechtenstein and the German *Land* of Baden-Württemberg. In Austria, too, NTB graduate study courses are recognised as equivalent to courses at *Fachhochschulen*.

The close contact with the economy and NTB's technical competence show, above all, in the field of technology transfer to enterprises.

Education at Universities and Other Academic Institutions

There are two private institutions of academic education and research in the Principality of Liechtenstein: the *Internationale Akademie für Philosophie* or *IAP*, and the Liechtenstein Institut; only the IAP, however, offers regular study courses.

Of those Liechtenstein students who decided to study abroad due to a lack of relevant options in the country itself in 1995, 360 registered at Swiss universities, mainly in Zurich, Fribourg, St Gall and Berne. Approximately 80 Liechtenstein students are studying at universities in Austria, in particular medicine, law and economics. A much smaller number have opted to study in Germany, and some in France or Great Britain. A number of students graduated in law or economics from a European university follow postgraduate courses in the U.S.

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A Diverse Range of Offers

In addition to internal educational strategies in the businesses themselves, there is an attractive range of options in continued education in Liechtenstein as well as in its neighbouring regions.

The Neu-Technikum in Buchs, Switzerland, offers post-graduate study courses in medical engineering, system engineering, and techno-mathematics. The private institutions of vocational education domiciled in Liechtenstein offer courses mainly in the field of management, communications, and foreign languages.

The country's orientation towards the status of a high-quality economic location has not only created new challenges for initial vocational training, but has also shown that only a high-quality system of continued education can comply with the future needs of customers and clients in rapidly changing markets.

A comprehensive range of advanced courses is offered by the Fachhochschule Liechtenstein and the Berufliches Weiterbildungsinstitut or BWI of the Gewerbe- und Wirtschaftskammer.

Fachhochschule Liechtenstein. Over the past years the Fachhochschule Liechtenstein has developed a comprehensive programme of continued vocational education. Lectures, seminars, study courses, graduate and post-graduate courses permit the definition of individual continued education programmes which correspond to personal as well as professional requirements. A modular system serves to guarantee these possibilities. Graduate and post-graduate diplomas attest the newly acquired qualifications. Subjects focus on technics, economics,

structural engineering, and environmental studies.

Interdisciplinary topics from the fields of art, culture, history, and communications complete these programmes of continued education.

Various seminars and study courses are developed within the framework of EU education programmes. Thus an increasing number of internationally recognised experts are available to qualified students.

Berufliches Weiterbildungsinstitut (BWI) of the Gewerbe- und Wirtschaftskammer. The *Gewerbe- und Wirtschaftskammer* attends intensively to the promotion of continued vocational education. In view of the technological, economic and professional changes in Liechtenstein, this is a fundamental task of decisive importance for the preservation of the country's competitiveness.

The programme offered by the *BWI* serves the purpose of promoting initial and continued vocational training in view of the new requirements presented by the working world as well as by society. *Unternehmerschulung* (Entrepreneur Training) is a programme of continued vocational education, which was offered for the first time in 1995, in collaboration with the *Arbeitsstelle für Erwachsenenbildung*, an institute for adult education. It comprises six training modules dealing with accounting, organisations, communications, personnel management, marketing, and law.

Choice of courses of education in per cent

None or uncompleted vocational education 3
Apprenticeship 70
Specialised schools 7
Schools leading to Matura 20
Acquisition of specific certificates of abilities 10
Advanced specialised examinations 8
Fachhochschulen and Technical colleges 10
Universities 12
Age 16 – 20 years
Age 20 – 30 years

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The Structure of the Liechtenstein Educational System

[1] *Fachhochschulen:*
e.g. *Fachhochschule Liechtenstein*

[2] *Hohere Fachschulen* (Technical Colleges):
Hohere Technische Lehranstalten HTL
e.g. *Neu-Technikum Buchs,*
Hohere Wirtschafts- und Verwaltungsschulen HWV

[3] *Fachschulen* (Specialised Schools):
e.g. commercial schools, tourist colleges,
schools for doctor's receptionists,
hotel trade schools, crafts schools

[4] *Berufslehre* (Apprenticeship):
business and vocational schools
or *Berufsmittelschule*

[5] *Berufsmittelschule*
(Vocational school at higher level):
4 types specialising in commerce,
technics, trade, or design

[6] *Gymnasium* (Grammar School):
access to University as well as to
Fachhochschulen and Technical Colleges

Abbreviations:

VBL	*Vorbereitungslehrgang Fachhochschulreife* (Preparatory Course for attending *Fachhochschulen* and Technical Colleges)
VZV	*Vollzeit Vorkurs Technische Berufsmatura* (Full-time Preparatory Course for attending *Fachhochschulen* and Technical Colleges)
BMS	*Berufsmittelschule* (Vocational School at higher level preparing for attending *Fachhochschulen* and Technical Colleges)
BS	*Berufsschule* (Vocational School)

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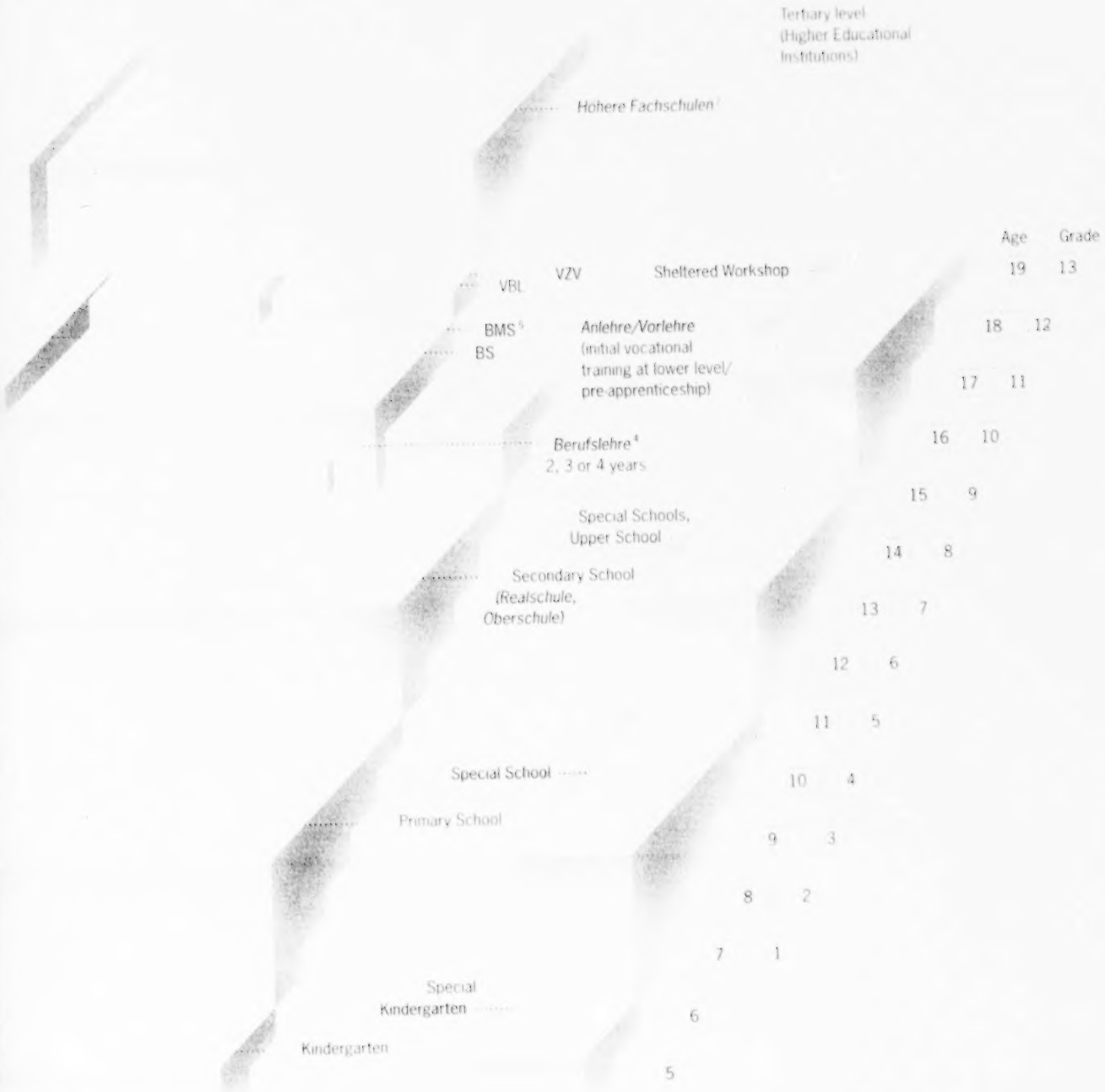

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Investments in Vocational Education

Qualified staff can be found only where a good system of general and vocational education has created the necessary preconditions. In order to achieve this, high investments in vocational education have been and are necessary in Liechtenstein, too. A broad awareness of the importance of highly-qualified personnel makes it easier to reach a consensus on the necessity of close collaboration, in vocational matters as well as in questions of organisation, and – last but not least – in financing.

The Costs of Vocational Education are Difficult to Quantify. It is difficult to say exactly how much is spent on vocational education in Liechtenstein every year. This is above all due to the fact that the vocational education system is financed by various sponsors. In addition to the State it is the businesses which assume a large part of the financial responsibility within the framework of the practical training of apprentices and continued education provided for their staff in general. Nevertheless, vocational associations, the community and the students themselves make fundamental contributions as well.

State Expenditure on Vocational Education. The major part of the state's expenditure on vocational education is allocated to the following:

- subsidies to vocational schools, other institutions of vocational education, as well as colleges and universities in Liechtenstein and its neighbouring countries,
- the administration and organisation of vocational education,
- the organisation of courses within the framework of initial vocational training on a national level,

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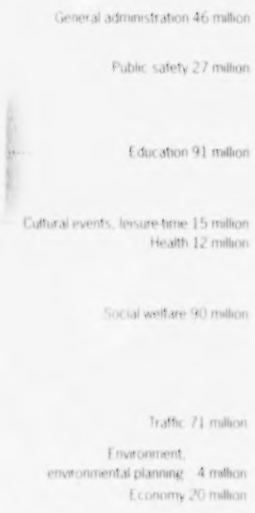
- the organisation of courses for instructors and officers in charge of apprentices in businesses,
- scholarships and grants for apprentices and trainees attending initial and continued vocational education as well as for university students.

Together with state subsidies and grants to secondary and tertiary education and to Liechtenstein students, the total expenditure on vocational education in 1995 amounted to approximately Sfr. 18 million, or about 3.5 % of the overall budget.

Contributions of the Economy. In addition to the State, the Liechtenstein economy, too, invests large sums of money in vocational education. Even though there are no specific national investigations into this topic, a study conducted in Switzerland allows conclusions to be drawn on the situation in Liechtenstein.

According to these findings, the financial commitment appears to depend on the size of the business concerned. Thus small businesses spend a gross amount of approximately Sfr. 12,400 per apprentice each year, while medium-sized firms spend Sfr. 24,900 and large ones Sfr. 33,500. However, this does not necessarily mean that small and medium-sized firms would offer education of a lesser quality, because an essential part of the system of practical training is based on thousands of working hours performed free by masters and instructors in the businesses training the apprentices.

Budgeted expenditure of the Principality of Liechtenstein in 1997 in million Sfr. (excerpt)



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Perspectives

Liechtensteinische Industrie- und Handelskammer – LIHK

(Liechtenstein Chamber of Commerce representing industry)

To provide a system of initial and continued vocational education on as high a level as possible is a fundamental topic and a constant challenge to the Liechtenstein economy and professional world. The two sides of industry alike endeavour to develop attractive education programmes to support and promote employees and to appeal to future members of staff. In this context, an enhanced collaboration in the education sector is becoming more and more important so that any synergies may be exploited together.

The Importance of an Up-to-date System of Vocational Education for Liechtenstein Industry. Liechtenstein businesses can stand up to competitors from low-wage countries only by offering innovative products of high quality. This forces them to engage in capital-intensive manufacturing with high real net outputs. This can be achieved by employing qualified staff who never cease to deepen their knowledge and expand their expertise. It is the task of an up-to-date vocational education system to fully develop all employees' abilities and skills and thus to maintain or even improve the level of competitiveness.

The International Trends of Development Require Different Qualifications. There are two tendencies that characterise the development of our markets: globalisation and liberalisation. They lead to an increase in international competition and present new challenges for export-orientated enterprises such as the Liechtenstein industrial businesses: shorter delivery times and product life cycles, smaller margins and constantly changing conditions of competition.

Furthermore, the rapid technological changes also force businesses to adjust and make new demands upon all staff. The following key qualifications are becoming more and more important for employees in industry and elsewhere:

- a broad basic professional knowledge
- process-orientated thinking and acting,
- flexibility and the ability to learn,
- initiative and a sense of responsibility,
- the ability to work in a team and to express and accept criticism,
- the ability to communicate and the knowledge of foreign languages,
- commitment and interest,
- stamina and drive.

Educational Initiatives of the Industrie- und Handelskammer. The *Industrie- und Handelskammer* informs its members about any offers of continued vocational education and co-ordinates open programmes organised by the Liechtenstein industrial businesses. Its personnel department holds regular meetings, exchanges experiences, and comments on questions of education policy. In collaboration with government institutions and various commissions, the *Industrie- und Handelskammer* endeavours to increase the attractiveness of vocational education in order to preserve it as one of Liechtenstein's most important locational advantages.

The Contribution of Industrial Companies to the Promotion of Vocational Education. The Liechtenstein industrial companies make great efforts indeed in the field of vocational education. This is shown in particular by the excellently equipped training workshops, the employment of highly qualified instructors, and the broad range of offers for short-term *apprenticeships on trial*. The companies have a decisive influence on the contents of the educational programmes and cover the major part of the financial expenditure on apprenticeships and trainings.

Specialists who work full-time in industry and have a second job as teachers at institutions of vocational education, guarantee practice-orientated classes.

Companies also offer internal programmes of continued vocational education and thus make sure that employees are continuously and systematically trained.

Gewerbe- und Wirtschaftskammer des Fürstentums Liechtenstein – GWK

(Liechtenstein Chamber of Commerce representing SME's)

The Importance of an Up-to-date System of Vocational Education for the Liechtenstein Economy, Crafts and Trade. New materials and manufacturing techniques, a changing competitive situation, and the extraordinary development of communications technology have far-reaching consequences for almost all commercial professions. Due to their structures and sizes, small and medium-sized enterprises (SME's) may react very fast to such market developments. But this high amount of flexibility requires entrepreneurs and staff alike to have a high-quality basic training at their disposal and to further expand their professional as well as their personal education.

The International Trends of Development Require Different Qualifications. Liechtenstein's opening towards the common European Economic Area has decisively influenced national commercial enterprises. On the one hand there is an opportunity to open up new markets, while on the other hand competition is becoming fiercer. New qualifications are sought first of all in the fields of quality management, economics, and communications. It is also becoming more and more important that employees recognise and know all the processes within their company and assume an entrepreneurial way of thinking.

Educational Initiatives of the Gewerbe- und Wirtschaftskammer. Despite a broad range of vocational education options offered by institutions and organisations in Liechtenstein as well as in its neighbouring countries Switzerland, Austria and Germany, there is still a specific need for education in Liechtenstein enterprises, which has hitherto been met only in part or not at all. The *Gewerbe- und Wirtschaftskammer* has been endeavouring for some time to determine the specific needs of education in the individual fields and to cover them by offering arrangements for continued education within the framework of the newly developed Entrepreneur Training.

The Contribution of Commercial Businesses to the Promotion of Vocational Education. Within the framework of the dual system of vocational education, the commercial businesses render contributions of decisive importance by training and educating their staff in a practice-orientated way. Furthermore, their representatives take an active part in the work of examination boards in the individual professions and thus help to define the needs and requirements of the branch concerned which can then be implemented by the institutions of vocational education.

Over the past years regional and national EREA groups have gained more and more importance; individual businesses join in such groups to offer a common programme of continued vocational education and exchange their knowledge and experiences.

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New Opportunities through Participation in European Education Initiatives. The LEONARDO DA VINCI Programme addresses also and above small and medium-sized enterprises, so that support is particularly offered in respect of educational activities for such target groups that have not yet participated in many educational programmes. An action such as *Exchange and Placement*, for example, offers apprentices and young employees in commercial enterprises an opportunity to get to know other working techniques, corporate cultures, and languages. This is a way to make commercial professions even more attractive.

In its capacity as partner in EU education projects, the *Gewerbe- und Wirtschaftskammer* endeavours to contribute to the international collaboration in the field of vocational education.

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Liechtensteinischer Bankenverband

(Association of Liechtenstein Banks)

The Importance of an Up-to-date System of Vocational Education for the Liechtenstein Banking Sector. The Liechtenstein banking institutions attribute much importance to vocational education, because well-trained staff has always been an indispensable element of success to them.

Number of contractual relationships in industry, trade, and services, as well as agriculture, forestry, and household management in 1996 in per cent

Banks need flexible employees characterised by entrepreneurial dynamism, who think and act in a customer-orientated way, but are also able to skilfully integrate the economic aspect in relationships with clients. The main reservoir of well-

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trained specialists is still the banks' own pools of apprentices. Experience shows that former apprentices, once they have worked for a few years and proved the necessary degree of commitment, are the banks' first choice for management positions.

The International Trends of Development Require Different Qualifications. Deregulation, globalisation, take-overs and mergers, new products and technologies, as well as changes in the structures of competition and clientele are characteristic features of the development in the banking sector.

In order to cope with these demands, education systems have to leave old and inflexible paths and well-worn patterns. If it is possible to integrate the emerging trends into the supportive measures of every single bank, all future challenges may be accepted – and positive trends can already be determined.

The Contribution of the Liechtenstein Banking Establishments to the Promotion of Vocational Education. An important motto for most banks' personnel policies is *promoting by demanding*. From a pragmatic point of view, this statement shows the two most important aspects in the relationship between employer and employee. The employer is willing to lend support and promotion if the employee in turn shows commitment and motivation.

In promoting initial and continued vocational training, the Liechtenstein banking establishments consider it very important that their employees show a sense of personal responsibility. Employees have to take care of their own further education in the first place. However, the company advises and supports them.

Initial and continued vocational training options are, therefore, offered where there is a corresponding demand.

As far as the education and training of apprentices is concerned, the Liechtenstein banks collaborate closely and very well. In addition, they endeavour to offer initial and continued vocational training on an internal as well as an external basis and thus to render vocational as well as personal support.

New Opportunities of Vocational Education through Participation in the European Education Initiatives. As far as the existing education programmes are able to satisfy actual needs, they have to be considered a valuable addition to the range of offers formerly available. The specific opportunity for the banking sector consists in the fact that – especially within the framework of initial vocational training – employees may familiarise themselves with the European and/or international working environment and thus gain new experience.

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Liechtensteinische Treuhändervereinigung

(Association of the Liechtenstein Trustees)

The Significance of an Up-to-date System of Vocational Education for the Liechtenstein Trust Industry. The profession of a trustee is characterised first of all by the responsibility for the precise legal structuring of every client's interests and the economic integrity of the client's property. These tasks require a considerable amount of general and specialist technical know-how, a mature character, and the ability to co-operate in local and international teams of experts.

The International Trends of Development Require Different Qualifications. The framework conditions for the trust industry in a low-tax country such as Liechtenstein, however, have changed permanently over the past twenty years. From today's point of view the following factors are of decisive importance:

- The extremely intensified competition produces competitors in other low-tax centres some of which offer considerable cost advantages in comparison with Liechtenstein.
- Foreign tax laws are constantly changing and influenced by an international relationship, so that expert fiscal planning is required on a much higher level. Even better technical and specialist qualifications are required, and thus an increased amount of education and experience.
- Due to its accession to the EEA, Liechtenstein will not be able maintain its protectionist attitude. The Liechtenstein trust industry will thus have to face the challenge presented by banks and trust companies from other EEA member states which enter the country and compete with Liechtenstein institutions in their own territory.

The Contribution of the Liechtensteinische Treuhändervereinigung to the Educational Sector. On the level of commercial education the *Liechtensteinische Treuhändervereinigung* collaborate with vocational schools in the organisation of a special course on the Liechtenstein trust system for apprentices in their last years of training.

In addition to that, the *Liechtensteinische Treuhändervereinigung* organises a special course, at the end of which students may take the Liechtenstein Trustee Examination, which is a prerequisite to obtain a government licence as a trustee.

The Contribution of the Trust Companies to the Promotion of Vocational Education. The individual trust companies, in particular the large firms, organise special seminars of continued education for their employees on a regular basis. Furthermore, they often send employees to external seminars.

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Liechtensteinischer Arbeitnehmerverband

(Association of the Liechtenstein Employees)

Education – Preparing the Way for the Future. Whether our society will be able to guarantee a livelihood for everybody will depend more and more on how we are able to cope with the rapid changes in the vocational and the working worlds. The inflexible concentration on technical progress often causes us to forget that even the most modern technology alone cannot guarantee economic success. It has to be implemented and used by employees, by human beings. But this requires knowledge and vocational competence which have to be constantly adjusted and renewed.

Education for Everyone. The Liechtensteinischer *Arbeitnehmerverband* attaches much importance to a comprehensive policy of continued vocational education. And continued education must not be a privilege reserved for a minority. Therefore, it has to be accessible to everyone who makes use of education and thus has to waive gainful employment for a certain period of time. When such a person wants to resume a profession, a purposeful programme of continued education is of importance, too.

Continued Education is Important. The Liechtensteinischer *Arbeitnehmerverband* endeavours to obtain a statutory regulation for the continuous expansion of the possibilities of continued vocational education in industry and trade, within the framework of the respective collective agreements. Both employers and employees agree that purposeful continued education is indispensable in order to guarantee the competitiveness of businesses as well as for the personal and vocational development of employees.

Life-long Learning. The programmes of continued vocational education offered by the Liechtensteinischer *Arbeitnehmerverband* are tailor-made for the needs of employees in industry and the various sectors of the Association itself. The collaboration of the Employees' Associations between companies as well as on an international level in Europe will constitute a great challenge as well as an opportunity for the Trade Union.

The project entitled *Getting Involved in the Employees' Association*, which has been developed within the framework of the European Year of Life-Long Learning, aims at promoting the Liechtenstein employees' representatives by providing purposeful programmes of education. In the end this educational event is also to emphasise the importance of life-long learning in order to cope with the economic challenges presented to Europe and to Liechtenstein in particular.

Vocational Education and the European Union

Investments in Human Resources as a Cornerstone of the European Society. The countries of Europe are experiencing profound political, technological, economic and social changes. To react fast to these changes in order to maintain the current level of competitiveness, is a great challenge for the European industry, for the political leaders, but above all also for the individual.

As a particularly purposeful means of coping with all these changes, more and more importance is attributed to a good general and vocational education. This is due to the fact – as the Commission of the European Union states in its White Book on *Teaching and Learning – Towards the Cognitive Society* – that there is no doubt that the European countries no longer have a choice: in order to hold their own, in order to remain a constant factor in the world, they have to complete the progress achieved within the framework of economic integration by making larger investments in knowledge, abilities and skills.

Since its accession to the EEA, Liechtenstein has been entitled to participate in various programmes and actions initiated by the European Union. In the educational sector this applies in particular to the LEONARDO DA VINCI and SOCRATES programmes. The basis for the cooperation in this field is formed by the Treaty on the European Economic Area of May 1992.

European Educational Policy in the Course of Time. Educational policy has not always been considered that important. Only as late as in the mid-

dle of the 1980s did this sector become a focus of attention in Europe. Now there is hardly any written statement by the Commission which would not underline the importance of education for economic and social progress. It is the target of this process to increase the awareness of the participants in educational policy: ministers, interest groups, businesses, employees, instructors, and many more. One example of this is the year 1996, which the Commission had proclaimed the Year of Life-long Learning. At the same time the member states organised a large number of events on this topic.

In addition to such measures enhancing the general awareness of the issue, the European Commission also takes more concrete steps: in 1995, SOCRATES (EU Action Programme on General Education) and LEONARDO DA VINCI (EU Action Programme on Vocational Education) were set up.

The Legal Powers of the European Union in the Field of Education. The legal powers vested in the European Union in the field of educational policy were disputed for a long time. By virtue of the EEC Treaty of 1957, educational policy was defined as part of social policy and thus did not leave much manoeuvring space for activities.

The member states, on the other hand, were very keen to make sure that Brussels did not interpret its restricted manoeuvring space in an all too offensive way. Nobody wanted a standardised European educational system, since education was seen as an expression of culture and national identity and, last but not least, as a factor in competition. As an example we may only refer to the dual education system, which is implemented in its pure form only in very few European states (Austria, Germany, Liechtenstein, Switzerland).

The Maastricht Treaty of 1991 enhanced the legal position of the educational sector and thus led it out of its shadowy existence. The European Union Treaty has been the first to take general education into consideration as one of the spheres of action of the Union (Art. 126 of the EU Treaty). Vocational education has been stipulated as an independent field of policy (Art. 127 of the EU Treaty), so that the EU is now granted wider powers: *The Union promotes a policy of vocational education which supports and completes the measures taken by its member states...*

But the European bodies have also borne the reservations of the members states in mind. On the basis of subsidiarity, Brussels may only support and complete the respective national educational systems, i.e. expand them by a European dimension. It may not, however, standardise them, neither now nor in the future.

Areas of Co-operation between the EU and Liechtenstein

The European Programmes on Education. Liechtenstein's opportunities to take part in educational programmes of the European Union are based above all on Article 1 and Part VI of the EEA Treaty, which deal with co-operation beyond the scope of the four freedoms. It is stressed in this that the contracting parties shall enhance and intensify their co-operation within the framework of joint action programmes, among others in the fields of general and vocational education and youth matters. The EFTA/EEA member states are granted the right to fully participate in certain programmes. In accordance with these provisions, Liechtenstein may now participate both in the LEONARDO DA VINCI Programme and in the SOCRATES Programme.

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SOCRATES – EU Action Programme on General Education

1996: The European Year of Life-long Learning. 1996 has offered Liechtenstein, too, the chance to take part in the Union's European Year of Life-long Learning. Among other things, this initiative has supported projects aiming at enhancing the European public's awareness of the importance of life-long learning in general and vocational contexts.

Other Activities. Another possibility for Liechtenstein to co-operate with the EU in the field of vocational education in the future, is a participation in projects organised by CEDEFOP, the European Centre for Development of Vocational Training, which has been established to render scientific and specialist contributions to the support of vocational education and continued training on a European level.

One sector of vocational education which is of particular importance and where Liechtenstein co-operates with the EU, is the field of mutual recognition of professional qualifications. In accordance with to Article 30 of the EEA Treaty, the EEA member states have agreed to take the measures required to mutually recognise diplomas, examination certificates and other certificates of ability in order to make it easier for employees and self-employed persons to take up and practise a profession in the EEA member states.

The SOCRATES Programme aims at contributing to the development of a high-quality educational system and the creation of an open European education scene. The Programme, which is scheduled until 1999, consists of three areas of activity for the Union, with university education (ERASMUS) being accredited particular value.

Although there is no doubt that university education also includes elements of general education, its real aim consists in preparing students for the demands of the professional world. In this respect universities fulfil essential tasks of vocational education.

The ERASMUS Programme permits universities and academic institutions to implement manifold measures which are characterised by their European dimension with financial aid from the European Union.

Furthermore, ERASMUS also provides direct financial support for students who intend to study for up to one year in one of the EEA member states.

ERASMUS students are even exempt from compulsory tuition fees, and the credits they acquire at their host universities have to be acknowledged at home.

LEONARDO DA VINCI – EU Action Programme on Vocational Education

Until 1999 LEONARDO will support international co-operation in the fields of initial and continued vocational training, as well as the collaboration between universities and the economy. The Programme appeals to all people actively involved in vocational education, also and in particular to businesses.

There are several objects pursued. In view of the deepening of the European Common Market, businesses are to be convinced of higher investments in the vocational education of their staff. The Commission hopes that an intensive European co-operation in the whole field of vocational education will help to obtain an enhanced awareness of the new opportunities as well as of the risks for businesses.

International project partnerships between businesses, in particular small and medium-sized enterprises, educational institutions, as well as social partners are the target groups supported. Thus innovative strategies of initial and continued vocational training are to be promoted and then exchanged and distributed in the Union via a European network. In general, the Programme provides for the support of three different kinds of initiatives:

- the drafting, development and testing of international pilot projects, e.g. in order to develop common educational modules;
- the implementation of practicals which permit apprentices and trainees, young employees, and university students to receive part of their vocational training in another member state;
- the achievement of findings in the field of vocational education by means of surveys and analyses based on a common schedule, such as the investigation of the needs of new vocational qualifications.

Together with all other EEA member states, Liechtenstein has already submitted several project applications in the first years of the Programme and has thus been participating in the EU Vocational Education Programme right from the start. For a small country like Liechtenstein, LEONARDO DA VINCI indeed offers significant opportunities: on the one hand the implementation of new education projects often depends on the availability of resources in terms of personnel, materials or time, which are of course scarce in relatively small institutions and economic organisations; thus by collaborating in the development of an educational project which is of common interest to partners from other EEA states, this bottleneck can be overcome more easily; on the other hand LEONARDO DA VINCI also invites to a transfer of know-how. This, too, may be a useful strategy for Liechtenstein partners to successfully implement educational initiatives in their own organisations.

In addition, LEONARDO DA VINCI supports the mobility of apprentices and young employees who are interested in practicals in a foreign partner's company. This is a new instrument, available also and in particular to Liechtenstein businesses, in order to make their programmes of vocational education even more

8 out of 10 European [illegible] believe that continuous education and training will enhance the status of their professional lives.

interesting and attractive and to create new stimuli for apprenticeships or careers as skilled workers. Employees who participate in this programme are not only given an opportunity to get to know other working methods and thus to expand their professional expertise, but may also improve their command of foreign languages and develop their personalities.

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Trends

Decreasing Number of Apprenticeships since 1986. This development may be explained by a decreasing number of births on the one hand and the rising attraction of Gymnasium education on the other hand. Industrial and commercial businesses particularly run the risk of no longer being able to recruit a sufficient number of well-trained skilled workers from within Liechtenstein.

A Shift in Interests. Young people who have attended higher secondary schools are less interested in manual trades or in industrial professions. While years ago it was first of all industrial professions (mechanic, precision engineer, toolmaker, machine fitter, etc.), which were chosen by a majority of young people, today most are attracted by commercial professions followed by jobs in design, medicine, and computer sciences.

Vocational education in Liechtenstein can gather autonomous momentum only to a limited extent, since it is closely related to the economic and pedagogical development in Switzerland. Nevertheless, these developments have to be observed in order to efficiently collaborate in the design of a system of vocational education, which lives up to the needs of the economy as well as of the learners.

Female Apprentices Choose Traditional Roles. Approximately one third of the total of around 900 apprentices registered in 1996 were young women. There are many factors indicating that their choices of profession are still influenced by traditional roles.

Future

Future-orientated Conceptions

Over-qualification. The current development in the economy and on the job market not only creates the problem of insufficient qualifications, but – in relation to the constant number of unemployed people, which amounts to 1 to 2 % – the problem of over-qualification as well. Even young people cannot continue their education forever, they want to work and gain job experience. This uncertainty whether or not they will be able to find a safe job is a problem for young people in Liechtenstein, too.

Integration of Less Gifted Persons. In addition to this development towards a higher vocational qualification, the integration of less gifted people in the future work process is a permanent task.

An Increasing Number of Second Apprenticeships. The number of people completing a second apprenticeship is unmistakably increasing and corresponds with the needs of the job market.

Continued Vocational Education is Becoming More Attractive. Programmes of continued vocational education have become much more attractive, and the necessary infrastructure is being adapted to this new situation. In the field of commerce, in particular, the trend towards higher vocational education has almost turned into a demand, since basic commercial education, as it is offered today, no longer meets all the requirements of this profession.

Initial Vocational Training and Block Teaching. In order to reach practical teaching objectives even more easily, a future concept for vocational apprenticeships stipulates block teaching for initial vocational education at school.

Berufsmatura. The various ways for employees to achieve the standard required for studies at *Fachhochschulen* and technical colleges guarantee the permeability of the educational system and offer new possibilities to achieve higher professional qualifications.

Learning in Practice. The close interaction between theory and practice is traditionally one of the most important elements of the Liechtenstein system of vocational education. This does not only lead to the dual system of education of apprentices, but is also expressed in the field of tertiary education.

Modular Educational Programmes. Educational programmes are more and more frequently offered in the form of modular systems: thus the individual needs of the parties concerned can be satisfied more easily and the relationship between an educational institution and its clients can assume a completely new dimension.

International Co-operation. The institutions engaged in vocational education in Liechtenstein are increasingly striving for co-operation with European partners.

Epilogue

In a time of profound political, economic and social changes, the traditional concept of three chronological phases of life – education, gainful employment, retirement – is becoming less and less important. New living and working conditions show clearly just how indispensable it is for the individual to continuously update his knowledge and skills.

The future demands on vocational education are, therefore, very different from those in the past. Vocational qualifications, which used to be a ticket of unlimited validity through one's working life, will develop into a ticket of very limited duration, and it will hardly ever be predictable for which period exactly it will remain valid. The individual may achieve better tickets by means of continued vocational education and personal development, by acquiring additional qualifications, by enhancing his flexibility and mobility; but even so he will probably not be able to obtain a permanent reservation. Businesses and employees alike will have to cope with the challenge of appreciating life-long learning as a permanent companion through life and the working world. They have to be integrated in a way which makes sure that the needs of the individual and the demands of the employer do not exclude each other.

This process has to be supported by a vocational education system which adjusts quickly to the changes to the framework conditions stimulated by the ever-changing needs of markets and customers. Comprehensive innovations will be necessary in order to further develop proven structures and courses of education, while establishing completely new forms, methods and measures of vocational learning at the same time. International education projects, co-operation between different actors, practical vocational trainings in European partner businesses, modular study courses, multimedia-aided learning – these are heralds of a future educational scene which will call on all participants of vocational education in Liechtenstein to contribute to its development.

Christoph Jenny
LEONARDO DA VINCI Office
Liechtenstein

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Addresses

Amt für Berufsbildung
National Authority of
Vocational Education)
Postplatz 2
FL-9494 Schaan
Phone ++41-75-236 72 12
Fax ++41-75-236 72 19

Regierung des Fürstentums Liechtenstein Ressort Bildung
(Government of the
Principality of Liechtenstein
Department of Education)
Regierungsgebäude
FL-9490 Vaduz
Phone ++41-75-236 60 10
Fax ++41-75-236 60 28

Berufsberatungsstelle
(Career Guidance Office)
Postplatz 2
FL-9494 Schaan
Phone ++41-75-236 72 00
Fax ++41-75-236 72 09

Schulamt
(Schools Office)
Herrengasse 2
FL-9490 Vaduz
Phone ++41-75-236 67 70
Fax ++41-75-236 67 71

SOKRATES-Büro Liechtenstein
(SOKRATES Office Liechtenstein)
c/o Schulamt
Herrengasse 2
FL-9490 Vaduz
Phone ++41-75-236 67 58
Fax ++41-75-236 67 71

LEONARDO-Büro Liechtenstein
(LEONARDO Office Liechtenstein)
c/o Fachhochschule Liechtenstein
Marianumstrasse 45
FL-9490 Vaduz
Phone ++41-75-237 62 03
Fax ++41-75-237 62 64

Fachhochschule Liechtenstein
Marianumstrasse 45
FL-9490 Vaduz
Phone ++41-75-237 62 62
Fax ++41-75-237 62 63

Gewerbe- und Wirtschaftskammer des Fürstentums Liechtenstein
(Chamber of Commerce representing SME's)
Zollstrasse 23
FL-9494 Schaan
Phone ++41-75-233 36 36
Fax ++41-75-233 23 04

Liechtensteinische Industrie- und Handelskammer
(Chamber of Commerce
representing industry)
Josef Rheinberstrasse 11
FL-9490 Vaduz
Phone ++41-75-237 55 11
Fax ++41-75-237 55 12

Liechtensteinischer Arbeitnehmerverband
(Association of Liechtenstein
Employees)
Dorfstrasse 24
Postfach 54
FL-9495 Triesen
Phone ++41-75-399 38 38
Fax ++41-75-399 38 39

Liechtensteinische Treuhändervereinigung
(Association of
Liechtenstein Trustees)
Postfach 814
FL-9490 Vaduz

Liechtensteinischer Bankenverband
(Association of Liechtenstein Banks)
p.a. LGT Bank in Liechtenstein
Herrengasse 12
FL-9490 Vaduz
Phone ++41-75-235 11 22
Fax ++41-75-235 15 22

NTB – Neu-Technikum Buchs
Werdenbergerstrasse 4
CH-9470 Buchs
Phone: ++41-81-755 33 11
Fax: ++41-81-755 54 34

Mission des Fürstentums Liechtenstein bei der Europäischen Union
(Liechtenstein Mission to the
European Union)
Place du Congrès 1
B-1000 Brussels
Phone ++32-2-229 39 00
Fax ++32-2-219 35 45

Published by	Liechtensteinisches Amt für Berufsbildung LEONARDO DA VINCI-Büro Liechtenstein
Coordination and editing	Mag. Christoph Jenny, LEONARDO DA VINCI-Büro Liechtenstein in collaboration with: Kurt Körner, Pedagogical adviser, Martin Negele, Ing. HTL, Liechtensteinisches Amt für Berufsbildung
Authors and those responsible for the respective contributions	Liechtensteinisches Amt für Berufsbildung, Josef Nigsch, Ing. HTL LEONARDO DA VINCI-Büro Liechtenstein, Dr. Dieter Gunz, Mag. Christoph Jenny Berufsberatungsstelle, Dr. Karl Jehle Schulamt, SOKRATES-Büro Liechtenstein, Liechtensteinische Industrie- und Handelskammer, Gewerbe- und Wirtschaftskammer des Fürstentums Liechtenstein, Liechtensteinischer Bankenverband, Liechtensteinische Treuhändervereinigung, Liechtensteinischer Arbeitnehmerverband, Fachhochschule Liechtenstein, NTB – Neu Technikum Buchs
Design	Karin Beck Anstalt, Schaan
Illustrations and typesetting	Cornelia Kaufmann, Karin Beck Anstalt, Schaan
Printing	BVD Druck+Verlag AG, Schaan

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LEONARDO DA VINCI-Büro Liechtenstein
1997

This publication was subsidised by the
EU LEONARDO DA VINCI Action Programme.